

**I. Amendments**

**A. In the Claims**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of the Claims**

Please cancel claims 1, 5, 6, 8, 12 and 13, and amend claims 2, 3, 4, 7, 9, 10, 11 and 14 as follows:

1. (cancelled)
2. (currently amended) The method of claim ~~4~~7, comprising applying to said reference input of said digital-to-analog converter a weighted sum ( $K_1$ ,  $K_2$ ) of said DC reference signal and said AC pilot tone.
3. (currently amended) The method of claim ~~4~~7, wherein said converter has an output and exhibits a transfer function between said reference input and said output, wherein said transfer function has a high-frequency roll-off, the method including associating with said reference input of said digital-to-analog converter a pre-emphasis network for compensating for said roll-off.
4. (currently amended) The method of claim 2, comprising providing, interposed ~~in~~ between said DC reference signal and said AC pilot tone and said reference input of said digital-to-analog converter, a summation node for generating said weighted sum.

5. (cancelled)

6. (cancelled)

7. (currently amended) ~~The method of claim 6, comprising:~~

A method of injecting an AC pilot tone into a digital signal, comprising:

setting the power of said digital signal via a digital-to-analog converter  
having a reference input for connection to a DC reference signal;

injecting said pilot tone into said reference input of digital-to-analog  
converter;

providing a laser source for generating said digital signal as a stream of  
optical pulses, the power of said pulses being set by said digital-to-analog  
converter;

providing a laser driver having an input for setting the modulation current  
of said optical pulses;

sensing the DC component and the AC component of the signal applied  
to said sensing input, and

controlling said digital-to-analog converter as a function said DC and AC  
components to maintain a constant modulation depth in said stream of optical  
pulses having ~~superimposed~~ said pilot tone superimposed thereon.

8. (cancelled)

9. (currently amended) ~~The device of claim 8, comprising~~

A device for injecting an AC pilot tone into a digital signal, comprising:

a digital-to-analog converter wherein the power of said digital signal is set by said digital-to-analog converter, said digital-to-analog converter having a reference input for connection to a DC reference signal;

a pilot tone source configured to inject said pilot tone into said reference input of said digital-to-analog converter;

a summation node for receiving said reference signal and said AC pilot tone to generate therefrom a weighted sum ( $K_1$ ,  $K_2$ ) of said DC reference signal and said pilot tone, wherein said weighted sum is applied to said reference input of said digital-to-analog converter.

10. (currently amended) The device of claim-8 9, wherein said digital-to-analog converter has an output and exhibits a transfer function between said reference input and said output, wherein said transfer function has a high-frequency roll-off, and wherein associated with said reference input of said digital-to-analog converter there is provided a pre-emphasis network for compensating for said roll-off.

11. (previously presented) The device of claim-9 10, wherein said summation node for generating said weighted sum is interposed between said pre-emphasis network and said reference input of said digital-to-analog converter.

12. (cancelled)

13. (cancelled)

14. (currently amended) The device of claim ~~13~~ 9, further comprising:

a laser source for generating said digital signal as a stream of optical pulses, the power of said optical pulses being set by said digital-to-analog converter;

a laser driver having an input for setting the modulation current of said optical pulses and, wherein said setting input of the laser driver is set by the output of said digital-to-analog converter;

a sensing line for sensing the DC component and the AC component of the signal applied to said setting input; and

a controller unit connected with said sensing line and configured to act on said digital-to-analog converter via said reference input to maintain a constant modulation depth in said stream of optical pulses having superimposed thereon said pilot tone as a function of said sensed DC and AC components-sensed.